18/7 BASIC NETWORKING COMMANDS:

1. **arp -a:** ARP is short form of address resolution protocol, It will show the IP address of your computer along with the IP address and MAC address of your router.

   OUTPUT: Interface: 172.16.8.98 ---0xb
   172.16.8.1
   Interface: 192.168.58.1 ---0xf

2. **hostname:** This is the simplest of all TCP/IP commands. It simply displays the name of your computer.

   OUTPUT: DESKTOP- INOISLT

3. **ipconfig:** detailed configuration information about your TCP/IP including router, Gateway, DNS, DHCP, ethernet adapter

   OUTPUT: Windows IP configuration
   Wireless LAN adapter Wi-fi:
   Media State......... : Media disconnected
   Connection Specific. DNS suffix.
   Wireless LAN adapter Local Area Connection *9:
   Media State .... : Media disconnected.

4. **nbt state -a:** This command helps solve problems with Net BIOS name resolution (Nbt-NetBIOS over TCP/IP)

   OUTPUT: Displays protocol statistics and current TCP/IP.
   NBTSTAT [[-a RemoteName][-A Ip address][-c][-n]
   [-r] [-R] [-RR] [-s] [-S] [interval]].

5. **net stat :** displays various statistics on computer active TCP/IP connections. it is used to monitor incoming and outgoing network tables.

   OUTPUT : Active connections

Proto	Local Address	Foreign Address	State
TCP	172.16.8.98:7680	DESKTOP	ESTABLISHED
TCP	172.16.8.98:7680	172.16.10.91	ESTABLISHED.
:			
TCP	[::1]:1521	DESKTOP:50655	ESTABLISHED
TCP	[::1]:50655	DESTOP:1521	ESTABLISHED

6. **nslookup:** (name server lookup) is a tool used to perform DNS lookups in linux. It is used to display DNS details, such as IP address of a particular computer, the MX records for a domain or the NS servers of a domain.

two modes: • interactive
　　　　　　　• non-interactive

OUTPUT: Default Server: Unknown
Address　　　　　: 172.16-8.1.

7. **pathping:** Path ping is unique to Window's, and is basically a combination of the ping and Tracert commands. Pathping traces the route to the destination address then launches a 25 second test of each router along the way, gathering statistics on the rate of data loss along each hop.

OUTPUT: Usage: pathping [-g host-list] [-h maximum-hops]
　　　　　　　　　[-i address] [-n]
　　　　　　　　　[-P period] [-q num_queries]
　　　　　　　　　[-w timeout] [-4] [-6]
　　　　　　　　　taget_name.

8. **Ping:** (Packet INternet Groper) command is the best way to test connectivity between two nodes. Ping use ICMP to communicate to other devices.
　　1. # ping hostname (ping localhost)
　　2. # ping ip address (ping 4.2.2.2)
　　3. # ping fully qualified domain name

OUTPUT: Usage: ping [-t] [-a] [-n count] [-1 size] [-f]
　　　　　　　[-i TTL] [-v TOS] [-r count]
　　　　　　　[-s count] [-j host-list] [k-host-list]].

9. **Route:** route command is used to show / manipulate the IP routing table. It is primarily used to set up static routes to specific hosts or networks via on interface.

OUTPUT: Route [-f] [-p] [-4 |-6] command [destination]
　　　　　　　[MASK netmask] [gateway] [METRIC metric]
　　　　　　　[IF interface].

ip command:
_____

      ip address show:

          It show the IP address assigned to an interference your server.

Output:

   1. < LOOPBACK_ ,UP, LOWER_UP >
   Phet 127.0.0.1/8 scope host 10.
   2. erp2so: <BROADCAST, MULTICAST, 1&00 &f dins>
   Not 172.16.8.118/22 brd 172.16.11.258

ip address add 192.168.1.254/24 dev enp2so.

    To assign IP to an interface.

ip address add (192.168.1.24/24 dev enp 280

    To delete IP to an interface.

ip link set echo up

    After the Interface status by bringing etho online

ip link set etho down

    After the Interface status by bringing etho down.

ip route add 192.168.1.0/24 via 192.168.1.254

    To add a route via the gateway at 192.168.1.254

ip route add 192.168.1.0/24 dev etho

    To add a route 192.168.1.0/24 that can be reached on device etho

ip route get 10.10.1.4

    Output: 10.10.1.4 via 172.16.8.1 dev enp2so src 172.16.8.118 wid 0 cache.

mtr command:

    mtr google.com:

    It shows statistics, including each hop with time and loss %.

    Output:

      Host

        1. 172.16.8.1
        2. statistic 41.229.49
        3. 142.251.227.127

mtr - b google.com:

    it shows the numeric ip address instead of hostnames

    Output:

Host IP address: IP Localhost, Localdomain(0.0.0.0)

    1. 172.16.8.1

    2. 142.250.171.162

    3. 142.251.227.217

dump- D:

    Before starting any capture, you need to know which interfaces tcp dump can use, You will need switch /root access.

    output:

    1. enps20 [up, Running]

    2. co/p3 80 [op, Running]

    3. any (pseudo device that captures on all interfaces.

    4. Lo [up, Running]

tcpdump -i enp2s0 src host 8.8.8.8:

    output:

    tcpdump, clea -r or -w for full protocol decode losening on enp2s0, sink-type capture size 262144 Bytes.

tcpdump -i enp2s0 pot 53

    output

    Listening on enp2s0, Link -type EN10s (ethernet), capture size 262144 Bytes.

ping -c 10 google.com

    It is a tool that verifies IP level connectivity to another TCP/IP computer by ending Internet control message protocol.

    output:

    64 bytes from maa05110- in- celoo.net (216.58.200.142); pcmp-seq=1 ttl =120, time=82.3 ms 10 packets transmitted, 9 received, 10% packet loss.

ping - google.com
output:
   Bytes from maa05310-in-11u-12100.net
(216.58.200.142); icmp-seq-2 til=20, time=78.9ms
5 packets transmitted, 4 recived, 20% packet loss.

tcpdump -i etho post not 53 and not 25
   It capture all post except port 53 and 25.
output:
   09.21:36 IP localhost - localdomain . 581194
gateway domain.
   7 packets captured
   8 packets received by enter
   1 packet dropped by kernel.

ip config command.
   It is a tool for configuring and troubleshooting
networks. It has since been replaced by the ip
command.
ip config -a → shows the ip address
ip config ethoup-6 shows the link set to etho up
ip config ethodown-1 shows the link set to etho down

nmcli connection show.
output:
   New 802-3 - ethernet connection +d 45bicl-1899-
4248-864a -03c06ac Teba 802-3- ethernet
enp 230.

nmcli connection show "New 802-3- ethernet
connection"
   connection. id : New 802-3 ethernet connection
   connection. interface_name: Shp180.
   connection. autocorred = yes
   connection. autocorrect. poliarity = 0
   connection. metered : 1

nmcli connection show "new 802-3-ethernet connection"
IPV6 method auto:
   connection.id : New 802-3-ethernet connection
   connection. readonly: user-student
   connection. gateway. Yo
    ping. timeout Yo
   connection. metered : unknown

nmcli connection show "new 802-3- ethernet connection" connection. autoconnect yes.

Connection id: New 802-3- ethernet connection
Connection. autoconnect : yes
Connection slaves : --
Connection. autoConnect. slaves : 1

nmcli connection show "New 802-3-ethernet connection"

connection . interface-name : enps20
connection. id : New 802-3 - ethernet connection
connection aid : 25ffc09f- 3702-42d5-9042
connection interface -name : enp1s0
Connection. readonly : no

nmcli connection add con-name "New 802-3-ethernet connection"

ifname enp2s0 type ethernet
Connection "New 802-3- ethernet connection" Successfully added.

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